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TOWARDS A BROADER SCOPE FOR FARM MANAGEMENT RESEARCH WITHIN THE FRAMEWORK OF THE SOCIAL SCIENCES

by

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AGRICULTURAL ECONOMICS

599

A Paper Prepared in Partial Fulfillment
of the Requirements for the Degree of
Master of Agriculture

Department of Rural Economy
Edmonton, Alberta

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ACKNOWLEDGEMENTS

This paper has been inspired by the common sense of most farmers I have met while in the employ of Alberta Agriculture. While their decisions were very rational in the light of the circumstance they found themselves, the same decisions did not always seem the wisest, if one adhered very closely to the model of the economic man who went busily about his day maximizing all things that led to increased profit. The problem, as usual, was in the economist's model. The solution lies in the observance of the real world. Human behavior and farm decision making embrace more than economics.

To Professors Dr. W. MacKenzie, Dr. G. Winter and Dr. W. Phillips who encouraged me to continue in graduate studies, I acknowledge their good teaching and their patience. To Dr. T. A. Petersen, who encouraged me in the writing of this paper, I express my profound respect for his understanding of today's farmer in modern agriculture.

It is appropriate at this point to acknowledge the stimulating discussion that was provided by my oral committee. They consisted of Dr. W. Phillips, Dr. A. Peterson, Dr. W. Schultz from the Department of Rural Economy, and Mr. W. Lamble from the Department of Extension.

To Jean and family, I express my thanks for their patience in doing without their husband and father for so many weekends over the past year. My thanks as well, to Audrey and Debbie, who so capably typed this manuscript. The manuscript, of course, is the author's creation and is therefore his sole responsibility.

G. B. Parlby

"A person is not likely to be a good economist who is nothing else"

John Stuart Mill

"But on the other hand it must be fully conceded to Comte that, even in the physical sciences, it is the duty of those who are giving their chief work to a limited field to keep up close and constant correspondence with those who are engaged in neighboring fields. Specialists who never look beyond their own domain are apt to see things out of true proportions; much of the knowledge they get together is of comparatively little use; they work away at the details of old problems which have been supplanted by new questions rising out of new points of view; and they fail to gain that large illumination which the progress of every science throws by comparison and analogy on those around it."

Alfred Marshall

[19, p. 636]

TOWARDS A BROADER SCOPE FOR FARM MANAGEMENT RESEARCH WITHIN THE FRAMEWORK OF THE SOCIAL SCIENCES

G. B. PARLBY

This paper explores the basis of decision making by the farm manager by reviewing relevant theory in the social sciences. A case is made for the integration of economics, psychology and sociology at the decision making level of the basic production unit within the agricultural industry. By developing multiple hypotheses and using strong inference, it is contended that a greater understanding of this decision making process could be developed. Research based on inductive reasoning as well as deductive reasoning would result in benefits to agricultural policy development and to farm management extension programs.

INTRODUCTION

There are within the Canadian agricultural industry milieu, a myriad of producers that have been described in many ways. Producers have been described by the amounts of resources they control; the amounts and types of goods and services they produce; the level of net income they have earned and the type of business organization they have used as a means of financing and controlling their farm operations. In this latter category, single proprietorship, partnership, corporation, and commune are terms that are used to describe the

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kind of business organization that is found in Western Canadian Agriculture. The dominant form is the single owner-operator family farm. In 1971, seventy-eight percent of the farm land area within the Province of Alberta has been estimated to be under the control of single proprietorships. [22, p. 4]

The means by which these operators make decisions has been the subject of minimal investigation in Western Canada.* What variables are considered by farmers in deciding when to enter agriculture; leave the industry; invest in new buildings, produce a particular product such as wheat, oats or barley, hogs or beef; and market domestically or on the export market? Answers are most often postulated from conventional wisdom or from variables identified by deductive reasoning. These are developed within the agricultural economist's theory of perfect competition, particularly the theory of the firm. As this theory has yielded a high degree of predictability in determining agricultural industry aggregate production responses to shifts in product demand and factor availability, it has generally been assumed that these variables are the main determinants that should be used as a basis for

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* A review of the Canadian Journal of Agricultural Economics for the past ten years revealed no articles yielding empirical evidence on how farmers make decisions. Research examples at the University of Alberta include: Buckmire, G.E., *Occupational Mobility of Farm People in the Bonnyville District*, Agricultural Economics Special Report #1, May 1966, and Lamble, G.W., *Off farm Migrants: A Case Study of Characteristics and Adjustments*, M. Sc. Thesis, University of Alberta, Agricultural Economics, 1969, University of Alberta, Edmonton.

farm management extension programs and agricultural policy analysis. For example, the Farm Management Branch of the Alberta Department of Agriculture has concentrated a great deal of its efforts in farm record keeping, estate planning, and development of economic decision making tools. Little effort has been expended on the behavioral processes of goal setting and family communication or on the development of personal managerial skills within the curriculum of farm management training. Yet decision making on the farm is a personal human process. A priori reasoning leads one to state that psychological characteristics of the manager will affect the level of risk the individual manager will assume. Family relationships will influence the goals of the manager and the means he will choose in working towards them.

The central exploration of this paper will evolve from the postulate that farm management needs to select its own body of theory from the three social sciences: economics; psychology; and sociology rather than from economics alone. An understanding of decision making by the farmer on his farm, requires an internally consistent body of theory that will derive equally sensible explanations for the actions of a farm manager who acts as an entrepreneur, and the farm manager who is security conscious and acts as a loss minimizer. It seems plausible that an interdisciplinary approach to understanding farm management decision making could yield high returns in farm management extension.

While it is beyond the scope of this paper to explore theories of learning contained within educational psychology, it would be possible to review the field of adult education for models that would explain how managers learn about and adopt new innovation. Innovation was seen by Schumpter to be the main variable in explaining economic growth.[9,p.72-74]

The primary objective of this research paper is the exploration of the basis in theory for an interdisciplinary approach to farm management decision making. Secondary objectives include the development of sample hypotheses for future farm management research, the review of the use of "strong inference" as a proposed research method and the prognostication of the results of using such an interdisciplinary body of farm management theory in agricultural policy development.

THE NATURE OF THEORY

Theory is used in scientific endeavor, as a basis for organizing, explaining, and predicting occurrences and events in the world around us. The development of theory for modern scientific pursuit of knowledge is dependent upon the collection of a body of observed data from the empirical world; the development of concepts, explanations, constructs, and principles, which provide understanding of the data observed, and the formal sets of mathematical propositions which can be proven to be mathematically consistent within and between the sets.

Rodgers indicates that theory in the social sciences in one way or another tries to explain a set of events. Searching for scientific explanation is a special type of theorizing. Theorizing involves description of events, the development of a logical explanation for their occurrence, and the subsequent use of the theory to predict similar occurrences in the future.[23, p. 2, 3] The development of a logical explanation that can be used for predictive purposes is termed "model building".

Deutsch & Krauss indicate that theory in the physical sciences are usually made up of three parts. First, there is an "abstract calculus" that defines the basic notions of the system. Second, there are theoretical constructs that flesh out the abstract calculus of the system. Third, there are rules of correspondence that link the theoretical constructs to concrete data of observation and experiment.[6, p. 6]

In every science, the observance of empirical phenomena will yield data which, when organized through a classification system, be it taxanomic or graphic in nature, will create the search for plausible explanation. The early economists must have observed that prices of a commodity varied up and down over time. They noted that the quantity of the commodity also varied over time. We can assume that they organized the data and found that there was a relationship between price and quantity. Causal relationships can be stated in the form of propositions. For example, if the supply of the commodity increases, then the price of the commodity will fall. Through experimentation, such a proposition could be tested again and again across many commodity markets. If the proposition was not disproved, it would become an economic principle; a construct of economic theory.

The inquiring mind will look for an explanation, a system of logic, that will indicate why prices fall as the volume of the commodity on the market is increased. He may deduce that people are willing to pay more for the first unit of the commodity they consume than they will for the next unit. A theory of utility is eventually developed as each inference is tested empirically and found to be a proposition which can be generalized into an economic principle. The theory of utility explains

consumer demand for goods and services.

The theory is eventually embodied in mathematical logic. For example, a demand function can be implicitly written as:

$$Qx = f(Px, Py, I, T)$$

where Qx is the quantity of the commodity x; Px is the price of commodity x; Py is the price of substitutes; I is personal disposable income, and T stands for consumer tastes.[26, p. 23] Mathematical deduction can be used to test the internal consistency of the theory. For example, if a supply function is written as follows:

$$1.)\quad Q_{s_x} = a + b\,P_{s_x}$$

and a demand function can be written as follows:

$$2.)\quad Q_{d_x} = c - g\,P_{d_x}$$

then we can deduce that if $P_{s_x} = P_{d_x}$ then $Q_{s_x} = Q_{d_x}$ and therefore, the two functions will have a unique intersection point where both equations can be solved by using a single value for P_{s_x} and P_{d_x}.

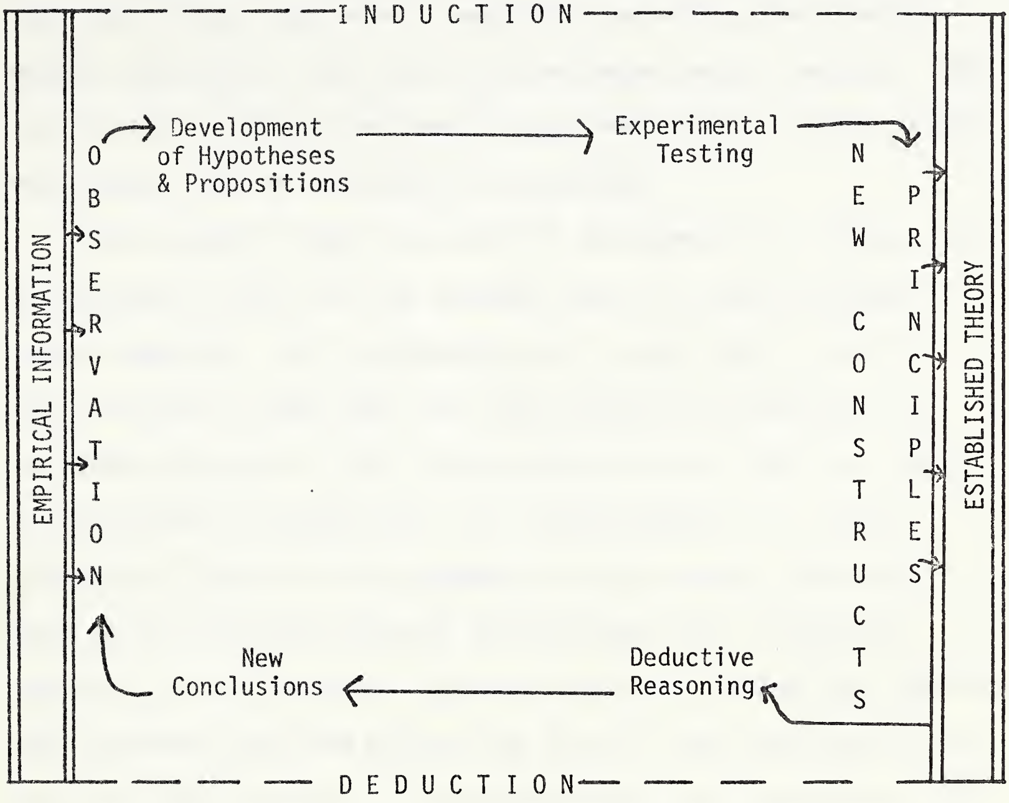
The important point to note is that the deductive theory developed through mathematical logic was initially dependent on the implicit demand function which was developed from empirical observation and inductive method, namely the development of propositions that were empirically tested through experimentation and never being disproved were adopted as economic principles.

Thus, theory is used in scientific endeavor, as a basis for organizing, explaining, and predicting occurrences and events in the world around us. The modern scientific world grew out of the deductive logic of Euclidian geometry, and of Descarte, and the inductive logic of Sir Francis Bacon. Bacon's scientific method depended on a process of

problem solving. First, the problem was stated; then an experiment was designed that would disprove the hypothesis (problem); the results were observed and conclusions were made.[27, p. 378] Inductive reasoning is a creative thought process that leads to the discovery of new knowledge, i.e. new constructs for theory. Induction results in the development of hypotheses and propositions. Induction depends on statistical inference to estimate the probability of re-occurrence of observed phenomena with the repitition of similar experimental conditions. Deductive reasoning is a system of logic depending on formal proof. It begins using established principles and through the application of reason, arrives at new conclusions. Deduction depends on algebra and calculus to reason correctly. Conclusions reached by deductive reasoning can be tested empirically to strengthen the theory of the science under investigation.[15, p. 3]

The relationship between the two systems of logic in the development of theory can be diagrammed as follows:

THE RELATIONSHIP BETWEEN DEDUCTION AND INDUCTION IN THE DEVELOPMENT OF SCIENTIFIC THEORY



In the preceeding diagram, we can imagine an economist observing the basic unit of production, the firm. He records that firms tend to expand output when the price of the product rises. He devises an experiment in which he states a proposition. *If the price of the product rises, ceterus paribus, then firms will expand output.* He continues testing this and other propositions until he finally generalizes the propositions into a principle. *Firms tend to maximize profits.* This principle becomes part of the established theory of economics. Inductive

reasoning has been used to develop the principle.

Given the principle, we can imagine the economist combining it with an already established principle *Firms who innovate make profits.* Deductively, without reference to empirical observation, the economist reasons, therefore; *Firms who tend to maximize profits innovate.* This new deductive conclusion can now be tested empirically to make certain the internal logic of the theory is consistent.

Both systems of logic are needed in development of a science. It is important to point out that economic theory is heavily weighted towards deduction. As a consequence, not too much time is spent in using induction to once again test the constructs of the theory to see whether they are in fact the most often observed empirical events of the behavior of economic man. In the development of an interdisciplinary theory of farm management decision making, induction would be the most useful form of logic to begin with. Inductive reasoning in the development of theory can be most productively applied where phenomena have been observed but have not been explained by any particular existing theory. New constructs set up as hypotheses could be tested through the use of strong inference. Those hypotheses that cannot be disproved would form the basis of the interdisciplinary theory.

The process of strong inference has been described by Platt

> *"Strong inference consists of applying the following steps to every problem in science, formally, and explicitly, and regularily.*
>
> 1. *Devising alternative hypotheses:*
>
> 2. *Devising a crucial experiment (or several of them), with alternative probable outcomes, each of which will, as nearly as possible, exclude one or more hypotheses:*
>
> 3. *Carrying out the experiment so as to get a clean result."*

Platt notes that:

> *"on any new problem, of course inductive inference is not as simple and certain as deduction, because it involves reaching out into the unknown."*[21, p. 347-352]

The strength of this type of theorizing lies in the fact that no hypothesis is excluded unless it can be disproved. In the development of a body of theory for farm management, the use of inductive reasoning and strong inference should be most fruitful in testing hypotheses that link together psychological traits of the manager, the sociological nature of the manager's family and the economic behavior of the manager. Strong inference could reveal new relationships that could explain the observable decisions of the manager with respect to levels of resource use, product mix, and levels of output on his farm.

THE SCOPE OF FARM MANAGEMENT

Historically, the information content of farm management has become less subjective over the years. At the same time, it has become deeply involved with the economic decision making process on the farm.

Texts on farm management have evolved from those which expounded philosophy that embraced the family as a major variable that farmers dealt with; to a philosophy that is more cryptic and less humanistic. The latter approach judges the potential for managerial success on the quality of the farmer's natural entrepreneurial talent and his trained ability to make decisions which increase farm income, i.e. make a larger return on investment, yield a greater return to labor and land, and provide for profit as a return to managerial entrepreneurship.

A review of discussions of farm management texts provides the following revelations.

Malone and Malone in 1958, point out that a family running a farm need to develop an organized system of decision making in order to clarify goals, understand and apply principles of good management, control sufficient productive resources, and develop working skills in farming and home making. [18, p. 10] They pointed out the means by which management skill is acquired.

> *"Unlike our natural inheritance of physical growth, we are not born with skill in management that grows as a matter of course - we are born with only the potential ability to manage. This ability is unevenly distributed among people; some can become excellent managers and others never can. Whatever our individual capacity may be it must be trained and developed if it is to be fully effective.*
>
> *Since farm families have more need for well-developed skill in management than typical wage and salary workers, it follows that the study of management is important to a farm family. Our formal educational system does not supply much of this. Some learn a good deal within the family circle; others very little. Families differ in their understanding of management and their awareness of the need for teaching children to manage. Some parents do not know how to teach young people, so many young couples start farming and home making with little appreciation of the important role it plays in their*

> *success"* [18, p. 9]

Smith, in 1958 pointed out with less concern about family that the four ingredients of management are good production, efficient marketing, substantial saving, and sound investing. [25, p. 38]

Hall and Mortenson, in 1960 philosophize about the goals that a manager may be working towards.

> *"No two people have the same goal in life. This is true of farmers as well as others. Some farmers are extremely ambitious and anxious to earn as much money as possible regardless of the amount of hard work it takes. Others prefer to take life more easy even though they know that it will mean a lower income and less security in old age.*
>
> *There are also conflicts in goals between various members of the family. Dad wants to pay off debts on the farm as rapidly as possible, but Mother would like to spend some money on improving the house; the children always seem to want, and need more money for clothing and other items. Teamwork is necessary between various members of the family in order for Dad - the farm manager - to have enough funds to buy the necessary machinery, equipment and breeding livestock so the farm can be operated efficiently"* [10, p. 3]

Hall and Mortenson further indicate that the qualities required for success in farm management include an intense love of land, simplicity combined with thrift, a veritable fondness for work, a persistent desire to learn and a sustained intellectual interest. Shakespeare is quoted for the wisdom within his philosophy.

> *"Men at some time are master's of their fates, the fault, dear Brutus, is not in our stars but in ourselves, that we are underlings."* [10, p. 9]

From the early 1960's farm management became more limited to the rational economic man. Less and less discussion centred on goal setting and family concerns. This change began with

Heady and Jenson and is best illustrated by Castle et al in 1972. Heady and Jenson, in 1960 approach farm management as a science. While they do not provide for a single all inclusive definition for farm management, they still provide for the interface between farm manager and family and note that *"good family living is the best goal for a successful farm manager",* i.e. *"Most farmers have as a final goal a high level of living and maximum satisfaction for the family." "Profit",* Heady and Jensen say, *"is not the final goal of many persons."* It may however be a short run goal. While they acknowledge these goals for farm management, they still limit farm management to

> *"The subdivision of economics which considers the allocation of limited resources within the individual farm, is a science of choice and decision-making, and thus a field requiring studied judgement."* [11, p. 6, 7, 8]

Castle et al make the final break with other disciplines by indicating that

> *"farm management is concerned with the decisions that affect the profitability of the farm."*

Given this definition, Castle et al go on to ascribe the qualities they think are required for success in management of a commercial farm.

> *"The management of the commercial farm calls for entrepreneurship, the ability to make decisions and the willingness to take risks. The success of the entrepreneur is determined by his ability to use his resources to achieve both monetary and non monetary objectives."* [4, p. 1]

They quote Bernard Baruch* as follows:

> *"To do this sucessfully (to speculate) and it is an ability of priceless value in all human affairs,*

---

* Baruch, Bernard, *My Own Story*, New York: Holt, Rinehart - Winston Inc., 1957, p.p. 105-106.

> *including the making of peace and war - three things are necessary:*
>
> *First, one must get the facts of a situation or problem. Second, one must form a judgement as to what these facts portend. Third, one must act before it is too late.*
>
> *I have heard many men talk intelligently, even brilliantly, about something, only to prove helpless when it comes to acting on what they believe. This need to act in time may point to the harshest single dilemma of a democratic society. In a democracy the will of a majority is supposed to govern, but with many crucial problems, if action is delayed until its need is apparent to everyone, it will be too late. To be evident to all, a danger must be on top of us - out of hand, in fact."*

In another page, Castle et all indicate that the five steps in decision making are: developing ideas and making observations, analyzing the information in terms of alternative courses of action; making the decision, taking action and accepting responsibility for the outcome. They then go on to philosophic discussion about the need for strength in the character of the farm manager.

> *"Of course, the manager must be willing to accept responsibility for his decisions (step 5). The farmer knows that his livelihood and that of his family depend on the decisions he makes. Many people are unwilling to accept this heavy responsibility. Such people are undoubtedly happier and probably are more productive in a salaried position where they are either not expected to make a large number of decisions or are not held strictly accountable for the decisions they make."* [4, p. 6,8]

To define farm management in terms of decision making affecting profitability on the farm is limiting. Barnard and Nix, in 1973 do point out that the need to plan production arises from three basic variables. These are the wants the manager wishes to satisfy, the scarce resources available to satisfy the wants and the methods and types of production chosen to use the scarce resources. While recog-

nizing economic efficiency as a short run criterion in management, they indicate this criteria is not the only one.

> *"However, even if profit maximization may be regarded as an important short term objective, it is by no means the only one, nor is it necessarily the most pressing. This is particularily the case in farming, where there are many other objectives, both financial and non financial, arising largely from the intimate relationship that exists between the farmer, his family, his workers, his farm and his farming."* [1, p. 3, 4]

This review of farm management texts indicates that over time, since the 1950's, farm management's definitional scope has been narrowed from philosophical conjecture about the components needed for success by a farmer and his family in balancing family expectations with the fruits of available resources to a much more specific connotation of how decision making affects business profitability under risk and uncertainty.

Such a trend is probable when over the same period of time, the disciplines of economics, sociology and psychology have been developing separate bodies of theory based on assumptions that preclude their integration. The theory of demand in economics assumes that wants are insatiable, that tastes are given and that population changes are independent of changes in commodity prices. These assumptions are the business of sociology and psychology. The models that they are built on do generally provide deductive economic predictions that stand up to empirical observation and testing. Thus, it does not matter for prediction purposes that the assumption may be an abstraction from reality. In a similar fashion, the theory of the firm is based on assumptions about the behavior of the firm (i.e. the manager?) that are also abstractions from reality. For example, firms, ceterus paribus,

will direct their productive behavior towards the maximization of profit. Stigler notes that;

> *"The extent to which the entrepreneurial behavior can be explained by efforts to maximize profits is a celebrated debating ground for economists."*

He goes on to say that;

> *"Even business men do not like this formulation. In one field study, when they were asked whether they maximized profits, they indignantly rejected the suggestion and pointed out they were sincerely religious, public spirited and so on - as if these traits were inconsistent with profit maximizing. But when the question was reformulated as: would a higher or lower price of the product yield larger profits? the answer was, usually no."* [26, p. 177]

It is one thing to develop theory about the economic behavior of firms through logical deduction based on empirically observed premises.

It is another thing to curtail the study of management of the farm to decision making principles based on one discipline's internally consistent theory.

In summary, this review of the scope of farm management has left in doubt the basic ground work upon which applied farm management principles are founded, not in the sense that what is offered is not valid, but in the sense that what is offered is limited. A number of statements can be made.

1) Initially, farm management texts viewed the farm as an entity that included the family, the farmer, and the resources they had control over. Farm management meant the skill of organizing these productive resources to meet family goals.
2) More recently, farm management is limited to the science of decision making on the farm under conditions of risk and uncertainty and the glorification of the entrepreneur as the

most suitable model for a farm manager to follow.

3) It is the contention of this author that the narrowing of the scope of farm management has been a function of the development of the economic body of theory underlying the teaching of farm management and the parallel reduction in the application of theories in sociology and psychology. In short, while economists, psychologists, and sociologists can specialize and, at least in the short run, ignore parallel development in other social sciences, managers of farms must continue to manage their farms to meet family needs and goals.

4) Support for a broad examination of the applicability of the development of an interdisciplinary theory for management of the farm is raised most often when the criteria for success of a farm manager are discussed. Conventional wisdom reigns supreme. A farm manager has been cast in a wide range of roles including the democratic family leader and the speculative entrepreneur.

There is need to "look over the fence"; to gain Alfred Marshall's *"large illumination"* by ascertaining the relevance of psychological and sociological theory in the management of the farm.

THE RELEVANCE OF PSYCHOLOGY

> *"Seldom is it fully comprehended that change in the direction of farm modernization is improbable, if not impossible in situations where the status quo satisfies a farmer; or where he has accepted or otherwise psychologically adjusted to his habitual way of life; or where he is filled with "devine discontent" but unable to change his circumstances for anyone or more of a complex of personal and impersonal limiting*

> *factors."*
>
> H. C. Abell [28, p. 196]

The farm manager's personality will play a major role in farm decision making. Yet, there is little, if any scientific psychological study of the successful traits required to manage a farm within the agricultural economic community.

Maslow's notes on profits may provide a partial explanation.

> *"Observe that much of the difficulty in the conception of profit, taxes, costs, and so on, can be seen to come from the professionalization of the accountants as a group. They are the ones who force upon the industrial situation the concern with numbers, with exchangeable money, with tangibles rather than intangibles, with exactness, with predicatability, with controls, with law and order generally, etc. Andy Kay pointed out that the accountants have the lowest vocabulary scores of any of the professional groups. I added that the psychiatrists think of them as being the most obsessional of any group. From what I know of them, they also attract to the schools of accounting those who are number bound, those who are interested in small details, those who are tradition bound and the like."* [20, p. 214]

One wonders whether these comments can be directed equally well towards those agricultural economists whose major effort is spent in farm accounting, especially computerized farm accounting. Does the extension effort in farm accounting influence the behavior of the farm manager? Maslow indicates that the creative personality centres on trust of self while the accountant's philosophy rests on mistrust.

> *"So much of this accountant's philosophy of life ultimately boils down to a mistrust of self. These are the people who will make budgets for their households, put certain sums of money in one bottle or another or another envelope or whatever and not touch it."*
>
> *"This is the opposite of the creative personality. The creative person trusts himself sufficiently to face a new problem or a new situation without any*

> *preparation, to improvise a solution in the new situation. The more obsessional person tends to classify the whole of the future, to prepare for every contingency, to have schedules and plans which he will not break, and the like."* [20, p. 215]

Deductive economic theory and quantitative economic models are in some ways the tools of the economic accountant rather than the creative entrepreneur. Agricultural economists, too often speak of income, capital, and profit rather than the creative ingenuity required to combine natural resources and other inputs together to make produce that will satisfy human need and wants. Linear programs while leading to profit maximization solutions seldom look at the long term risk involved in choosing a particular cropping pattern, nor can a program effectively build in the quantitative measurement of the entrepreneurial talent needed to change the nature of the production coefficients to much more efficient levels of resource use.

Lowenthal acknowledges the need to understand perception in the study of human behavior.

> *"What we see, what we study, and the way we shape and build in the landscape is selected and structured for us by custom, culture, desire, and faith. To understand perceptual processes requires examination of all these facets of human behavior."* [17, p. 1]

Gestalt theory in psychology deals with the study of perceptual processes. Their basic tenants are outlined by Deutsch et al.

> *"1. If perceptions are organized, then some aspects of perception will remain constant despite a change in all of the elements in the situation being perceived, so long as the inter relations among the elements remain the same.*
>
> *2. If perceptions are organized, then the perception of any element will be influenced by the total field of which it is a part.*

> *3. If perception is organized, then some of its characteristics of organization will emerge: These will be the inter relations of the entities being perceived rather than the entities themselves."* [4, p. 16, 17]

Berne has developed a classification of human behavior called transactional analysis. Human communication, i.e. transactions can be classified according to ego states of parent, adult, and child. They have corresponding personality organs entitled, exteropsyche, the neopysche, and the archaeopsyche. By having a structural classification for the human personality and having them expressed phenomenologically and operationally as Parent, Adult and Child, it is possible to research into the human personality based on an individual's response to a communicative transaction.[3, p. 11-17] Such a classification system could explain irrational economic behavior. It is possible to conceive of a situation where even if the adult ego state of the farm manager might follow an income maximizing alternative, the parent ego state would over ride the adult ego state and impose a rule developed for use in different times for quite different reasons. For example, a modern farmer may through his adult ego state, know that his farming success will depend on having no more than twenty percent of his land in forages. Yet his parent ego state demands that he put at least one-third of his land in forage for conservation purposes. This latter rule was impressed on the modern farmer by his father who did not have the opportunity to use commercial fertilizer. Berne points out that;

> *"The cases presented so far demonstrate the theoretical basis for structural analysis, which comprises three pragmatic absolutes and three general hypotheses. By a pragmatic absolute is meant a condition to which so far no exceptions have been found.*
>
> *1. That every grown-up individual was once a child.*

> *2. That every human being with sufficient functioning brain tissue is potentially capable of adequate reality-testing.*
>
> *3. That every individual who survives into adult life has had either functioning parents or someone in loco parentis.*
>
> *The corresponding hypotheses are:*
>
> *1. That relics of childhood survive into later life as complete ego states. (Archaeopsychic relics).*
>
> *2. That reality-testing is a function of discrete ego states, and not an isolated "capacity" (Neopsychic functioning).*
>
> *3. That the executive may be taken over by the complete ego state of an outside individual, as perceived (Extero psychic functioning).*

What are the farm manager's perceptions of decision making on his farm? Will these explain irrational economic behavior? Do parent, adult, and child ego states influence the nature of farm decisions? Farm management decision making is a human behavioral process. The choice made amongst a number of alternatives will in all likelihood depend as much on the farmer's psychological perceptions with respect to marketing, conservation, technology, community held beliefs and attitude towards uncertainty, as it will towards concepts of probability of success and profit maximization. It should be possible to categorize perceptual processes that have been adopted by successful farm managers. It has been possible to do so in other professions and occupations.

For example, in a recent address by Coombs, it was indicated that the major determinants of successful counsellors, priests, teachers, professors, social workers and nurses, that is, the helping professions, are;

1) how the people in the professions approach problems, i.e. internally or externally,

2) what they believe about themselves,

3) what they believe about the people they work with,

4) what they believe are appropriate purposes,

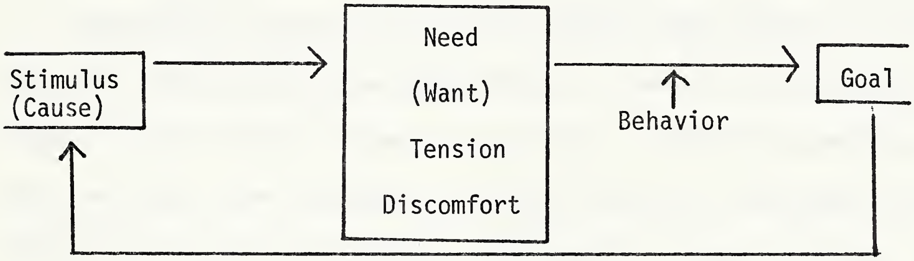
and 5) what methods they discovered that worked best for the individual helper in their respective profession.

Through research based on strong inference, Coombs and others have discovered that it is beliefs which determine success in the helping professions. It is beliefs that make successful or unsuccessful counsellors.

Farm management concepts have been developed and tested in an empirical environment, where the farm manager and his family have supplied the labor input. In these small North American businesses, where economies of scale are limited and substitution of capital for labor is a common occurrence, most farm decisions have not involved substantial organization of the labor input. Such phenomena are in contrast with those of large organizations where concentrated thought must be devoted to the management of human effort. Thus, applied psychology has flourished in the management sciences that study industrial organizations. In agriculture, psychological study has been concentrated in extension research. The psychological research emphasis has been placed on learning as it relates to the adoption of new technology. It is useful to explore psychological concepts developed in these areas and discuss their applicability within farm management. It should be possible to stimulate similar research into the psychology of farm management decision making, as opposed to research into farm decision making tools that assume rational economic behavior.

Behavioral psychology as applied to large organizations emphasizes motivation in managing labor. Large organizations spend time training staff to establish aims, goals, and objectives so activity can be organized. Leavitt indicates that behavior can be described in the following simple model.

A BASIC MODEL OF BEHAVIOR



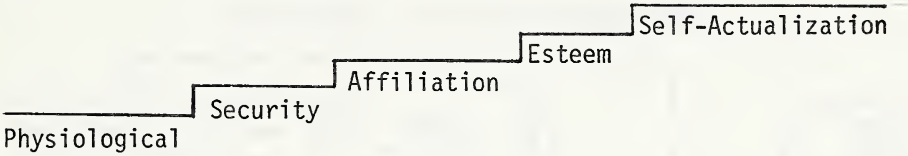
In this model, behavior is seen as the application of effort to remove needs. Needs are removed by looking for goals that will neutralize the tensions that caused the original need. Equilibrium is reached when the person does not have to behave. Leavitt indicates that humans have basic needs and psychological needs. Basic needs include food, shelter and clothing. Psychological needs are of two types: social and egoistic. Social needs include group belonging and the desire for affection. Egoistic needs are concerned with self-reliance and independence.[16, p. 1-20]

In communication of innovations to farmers, it is acknowledged that needs (motivation) must be created before farmers are predisposed to searching for innovations that will satisfy their "felt" needs. Rogers and Shoemaker indicate that:

> *"A need is a state of dissatisfaction or frustration that occurs when one's desires outweigh one's actualities, when "wants" outrun "gets".* [24, p. 105]

Maslow indicates that needs can be described in terms of a heirachy.

MASLOW'S HEIRACHY OF NEEDS*



Physiological needs include food, shelter, and clothing. Security needs are satisfied when the human being is free of fear of physical danger and deprivation now and in the future. Affiliation needs are met when humans have acceptance by others and have a meaningful relationship with other human beings. The need for esteem is met when the human being has been recognized by others and has received respect from others. Fulfilled self-esteem needs generate self-confidence and a feeling of prestige. Self-actualization represents the highest level of needs in the heirachy. To self-actualize means to maximize one's personal potential. It means doing what an individual thinks is important to himself. Individuals will fulfill a spectrum of all the needs in Maslow's heirachy to some extent. That is to say, one may begin fulfilling some self-actualizing needs before some affiliation needs have been completely met. However, physiological needs and security needs will be largely met before much self-actualizing can begin.[12, p. 17-21]

Hersey [12, p. 22-25] describes a motivating situation feedback model that could be used to explain farm management practices, i.e.

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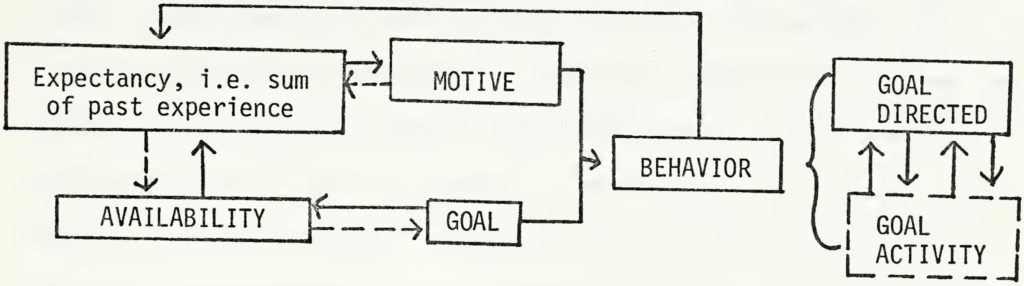
* Maslow, Abraham H., *Motivation and Personality*, New York: Harper and Brothers, 1954, as cited in Reference #12.

conventional wisdom with regard to investment, cultural crop practices, and farm purchase decisions.

MOTIVATING SITUATION FEEDBACK MODEL



Expectancy is the sum of past experience, i.e. habits. Habits are conditioned responses to various stimuli. Availability refers to the number of possible experiences available to the individual. Goals are based on the availability of past experiences. Expectancy is defined as:

$$Ps = f[F - \sum_{i=1}^{n} \varepsilon]$$

where Ps is the probability of satisfying a particular need; F is the number of personal failures and ε is a symbol for past experience.

In this model, motives are needs, wants, drives or desires and impulses within the individual. Behavior is composed of units of activity. Activities are goal oriented. Goals are established through the availability of experiences within which the individual can interact. They may also limit future experiences. Expectancy will moderate motive. Motives now will establish future experience. All interrelate to influence behavior. Behavior will bring about new experiences that will feed back into expectancy.

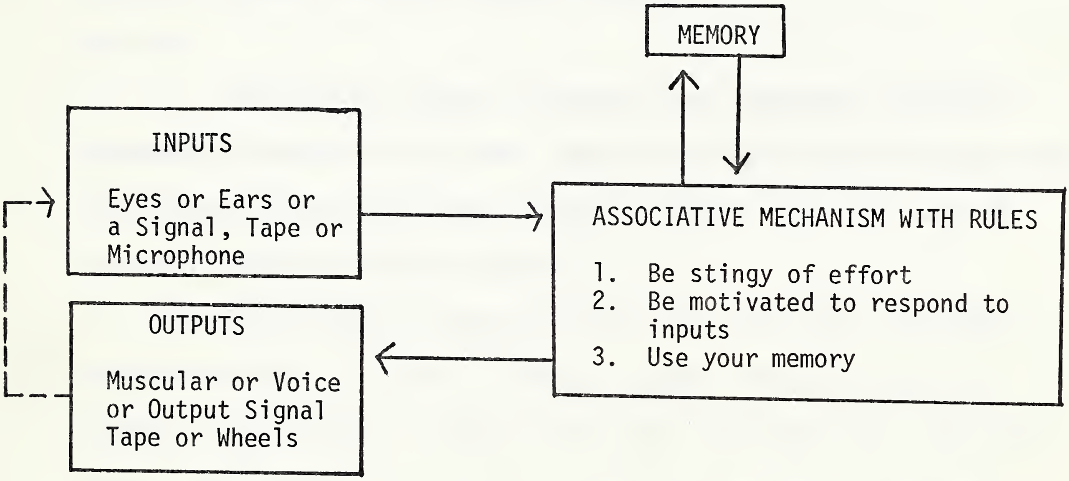
What application does this discussion of motivation and needs have within the confines of farm management? Leavitt indicates that successful executives come from homes where parental up-bringing has satisfied both the individuals basic needs and his psychological needs. [16, p. 1-20] If such analysis could be duplicated with farm managers, the knowledge could be most valuable in developing educational programs for youth who are planning to enter primary agriculture. There should be some application of Maslow's needs in understanding the decision making process in farm management. Through research it should be possible to classify farm management decision making according to the predominant level of need each farmer is attempting to satisfy. For example, if a farmer is barely meeting his physiological and security needs, it is unlikely that he will be capable of assuming risk levels that other farmers could easily accept when they have reached a state of self-actualization. Investment decisions may be made as much to satisfy affiliation needs and self-esteem needs as to earn more income. Could this type of theory explain over capitalization of machinery on many farms? The decision to match the neighbor's John Deere, 200 Horsepower, four wheel drive tractor could be based on self-esteem needs rather than a rational economic decision based on the need to expand farm capacity in order to increase the farmer's future income earning potential. Before a farm manager can begin to act rationally in economic terms, he should understand the basic and psychological needs which he is attempting to satisfy. This is not an easy task. Hersey and Blanchard suggest that motivation, i.e. the desire to fulfill needs is like an ice berg. That is, the subconcious mind with all its felt needs is 6/7 below the surface. [12, p. 36]

In Hersey and Blanchard's motivating situation feedback model lies the potential for farm management research into the area of need identification and subsequent identification of goals. In so doing, more emphasis would be placed on planning for future activity and less on immediate decisions that affect the annual cash flow. Goals can be described as hoped for rewards. They can act as incentives to satisfy needs. Needs can be priorized. To the extent that the farm manager has unidentified needs, he will be unable to plan well. Goal-orientated behavior is least understood in discussing profitability on the farm. If a farm manager's goal is to produce pigs, then an extension worker can only extend information on pig management. There is no use indicating that grain farming would be more profitable. In Hersey and Blanchard's model, if the sum of past experience has been drought, low income, and personal failure, the goal of the farm manager is likely to be personal security. The motive will be the need to reduce risk. The behavior will be an off farm job with more certain income, or the absence of large debt in relation to equity, or the production of product for a number of markets that together, will reduce price uncertainty over time. Alternatively, if the sum of past experience has been good weather, high returns from buying machinery and land, and personal success in applying new technology, the goal will be to increase personal wealth and opportunity. The motive will be the need to acquire control of capital and knowledge. The outward behavior may include purchase of land, larger machinery, and attendance at farm extension meetings. In the latter case, decisions may be made rapidly according to predicted economic rationality.

Management psychology stresses that in addition to understanding motivation of employees, it is necessary to have understanding about

the human being's learning, thinking, and problem solving processes. For instance Leavitt has described the learning process in four steps. These are: we act or behave; we perceive the effects; we organize and remember our perceptions; and we act again. Diagramatically, the learning model looks like the following.

A LEARNING MECHANISM MODEL


MEMORY
INPUTS
Eyes or Ears or a Signal, Tape or Microphone
ASSOCIATIVE MECHANISM WITH RULES
1. Be stingy of effort
2. Be motivated to respond to inputs
3. Use your memory
OUTPUTS
Muscular or Voice or Output Signal Tape or Wheels

[16, p. 56]

Farm management researchers could ask the questions; "How do farmers learn and solve problems?, What rules do they have for solving the problems on their farm?, Is there constancy in the kind of psychological learning process that can be described, explained and eventually predicted?"

In summary, the relevance of psychological theory to farm management has been pointed out by:

1. Indicating that there may be too much of the accountant's philosophy pervading the agricultural economics profession. This limits

the understanding of creativity and entrepreneurship;

2. Indicating that general psychological theory bases much of its work on perception and that perceptions can influence decisions in such a manner that results are not predictable according to economic rationale;

3. Describing psychological models that explain goal orientated activity in terms of motivation that, in turn, have been successfully applied in other fields of applied science

and by;

4. Pointing out relevant situations and hypotheses within the management framework of the farm, where these models would be applicable. Sufficient instances have been cited to indicate that this would be fruitful ground for future research.

Deductive economic reasoning, while most useful for developing predictive models to explain industry economic behavior should be tempered where science is dealing with the individual firm. This portion of this paper can be closed by quoting from Leavitt, who was arguing that profit maximization was a theory that would not explain general human behavior. In fact, maximization of any function in the real world would lead to ineffective decision making. Leavitt said:

> *"In fact (as the chapter on frustration pointed out, it is precisely when people feel impelled to find the very best method, when their levels of aspiration are set (usually by others) far above their abilities, that they are likely to be inefficient problem solvers, unable to decide and act because every available decision and action looks less than satisfactory."*

[16, p. 62]

THE RELEVANCE OF SOCIOLOGY

Inkeles refers to the narrow disciplinary basis that economics in general has taken in the recent past;

> *"Economics is sometimes called "the dismal science", a fact in which sociologists take some comfort whenever their discipline is dubbed "the painful elaboration of the obvious."*
>
> *Economics is the study of the production and distribution of goods and services. As it developed in the Western World, largely under the influence of the Classical School in England, economics has dealt almost exclusively with the inter relations of purely economic variables, the relations of price and supply, money flows; input-output ratios, and the like. Relatively little attention has been paid to the individual's actual economic behavior or motivation, and only modest energy has gone into studying productive enterprises as social organizations. This left great gaps in our knowledge of economic life. More important, it left the discipline inadequate to account for the actual course of economic events."*
>
> *"Studies of the role of values and preferences affecting the supply of labor, the influence exerted by prestige or custom of the price of goods, the origins and motivations of entrepreneurs and managers, and the contribution of education to productivity have been largely left to sociologists and psychologists. Only a few hardy economists have ventured to deal with them."* [13, p. 19, 20]

With such general condemnation of the efforts of economists in understanding group behavior as it relates to economic activity, it is appropriate to develop some overall understanding of sociological theory. Sociology is the study of social order; it is the science that investigates the origin and evolution of human society and social phenomena. Sociologists look for those group relationships, which describe the under lying regularity of social behavior. Sociology is the study of values and beliefs held by groups in society. The sum of all objects, ideas, information ways, habits, attitudes and values that

are common to successive generations are called the "culture of the group". Common values lead to the creation of common institutions. Institutions, as they relate to each other within society, make up a social system. Institutions are commonly developed to serve political, economic, expressive and integrative, and kinship functions. Political institutions are created to handle the exercise of power. Economic institutions provide for the production, distribution of goods and services. Expressive and integrative institutions provide for outlets for the arts, recreation, drama, scientific exploration and education. Kinship institutions provide for regulation of sexual relationships and child rearing. The study of institutions lies at the very heart of sociological investigations. [13, p. 1-68]

Inkeles indicates that the family has been one of the major sociological institutions under professional scrutiny.

> *"The study of change in institutions is well represented by the work of sociological students of the family, who have been concertedly seeking an answer to the question: What changes occur in the family under the impact of urbanization and economic modernization? The attack on this problem has been carried forward on a truly international basis, and a number of tentative answers seem likely to enduce the scrutiny of further testing. These investigations reveal that throughout the world the process of modernization has tended to strengthen the nuclear family as against the extended family; to increase the degree of mutual sharing of responsibility between the spouses, in contrast to the more traditional sharp differentiation of responsibility by sex; and to encourage the free choice of partner by the individual, rather than by his parents or some other authority. At the same time, these studies reveal that even under modern conditions there is much strength left in the extended family, as reflected in patterns of residence and of mutual help; that some forms of dominance, notably by the men, persist to a surprising degree even in the most modern households; and that the choice of marital partner is usually restricted to narrowly defined traditional groups of "eligibles".* [13, p. 89]

The kinship institution, the family has undergone dynamic change in Canadian agriculture as well. It was traditionally thought of as a relatively independent consuming and producing unit where family members had definite tasks. Work was a virtue. The father was the unchallenged head of the household, but left family matters to mother. Religion provided cohesion and integration within the family. Aunts, uncles and cousins were all part of this family in its extended form. More recently, through mass media and paved roads, few cultural differences exist between city and country. The picture of the dominant male head of the family is disappearing. [8, p. 33-36] Roger's indicates that in the modern social setting, the family contributes workers to the productive organizations of society and is therefore, primarily a consuming family rather than a productive one.[23, p. 30] The link with farm management and sociological theory will lie mainly in the institution of the family. The goals and objectives of the farmer will be intertwined with the goals and objectives of the family. Planning for future investment in the farm will more than likely be a family decision, if the farm family is a democratic nuclear family. The family will supply labor to the farm, at least on a seasonal basis. The family will use a portion of the income earned by the farm for consumption purposes. Planning for intergenerational transfer of farm resources is a major undertaking. The survival of the farm business will depend on how much forward planning has been done before death enters the family circle. Unlike the urban husband, the farmer's working day, his successes and his failures are all closely monitored by his family. His performance is not shielded by virtue of the manner in which the larger society is organized. The family can be a disruptive or supportive group within

which the manager must continue to make plans and decisions for his farm. The integration of family and business is still sufficiently strong that success in farming will be at best hindered, if not denied without reasonable stability in the farmer's family.

Barnes et al have stated the position of the family in businesses as follows:

> *"Family owned and managed concerns include some of the largest as well as some of the smallest companies in the United States and possibly the world. It seems pointless to talk about separating families from their businesses, at least in our society. Families are in business to stay."* [21, p. 114]

The kinship institution, the family, can therefore be hypothesized as a determinant of farming success. Here lies a fruitful area for sociological research within the field of farm management. What forms of family organization lead to success in farming? What family attitudes and values support the manager's decision making capability? Are family goals or are business goals predominant in establishing the management pattern for resource use on the farm?

Interim acceptance of the hypothesis that family relationships will affect the manager's success as a farm decision maker, allows one to move on to a review of pertinent sociological theory of the family. Rodgers provides an outline of a developmental approach towards explanation of the dynamics of the family. He defines the family as follows:

> *"The family is a semi-closed system of actors occupying interrelated positions defined by society of which the family system is a part as unique to that system with respect to the role content of the positions and to ideas of kinship relatedness. The definitions of positional role content change over the history of the group."* [23,p. 15]

There are two concepts contained within this definition. The first involves family interaction. The second involves the institutional characteristics commonly ascribed to the family unit by society. In the context of the family being a group, Rodgers develops a number of definitional concepts to create a structure for greater classification and understanding of group interaction in the family. A "norm" is a commonly held pattern of behavior expectation. It is a learned response held in common by the members of a group. A "role" is a combination of norms that are sufficiently distinguishable to make them identifiable as part of a social position. "Role behavior" describes what a family member actually does in the group in response to role expectations placed on him by the group. The group will apply sanctions to individuals whose role behavior varies too widely from the groups expectations. A "social position" combines all roles that belong to one of the actors in the group. A "group" is a system of inter related positions. Rodgers indicates that *"as an individual moves through the life cycle he is called upon to play a series of roles sequentially in distinction to the many roles he may play concurrently at any one period of his life."* [23, p. 16] A "role cluster" refers to a position at one point of time, while a "role complex" refers to two or more positions in a family system at any given point in its history. When role clusters of a position are linked together in sequential order over the life of the group, they make up a "positional career". When all positional careers are linked together they make up a "family career".[23, p. 15-16]

Such a classification system could provide the basic description of the farm manager's positional career within the family. What forms of role behavior do successful farm manager's adopt within their family?

Are the family's expectations of the farm manager such that his behavioral position will not allow him to adopt new technology within the farm? What forms of role behavior develop a successful pattern of family career's in agriculture? Estate planning may begin when the family is being formed rather than when it is being broken up. What kinds of group interaction lead to successful inter-generational transfer of farm assets? These types of questions can all be explored through the use of a sociological classification such as the one presented by Rodgers.

Rodgers continues by indicating that there are three general facets to family dynamics. These are the societal-institutional facet, the group-interactional facet and the individual-psychological facet.

In functional terms, the societal-institutional facet in our modern day refers to the maintenance of biological functions, the reproduction or recruitment of family members, and the socialization of new members. In a primitive culture, this facet would have included as well, the functions of production and distribution of goods and services, the maintenance of order, and the maintenance of motivation for group activity.[23, p. 23]

The group interactional facet refers to the dynamics of changing norms, roles, positions, systems, and careers within the family. As scientists, in a learning process, *"we must oscillate back and forth between the structural concepts of norm, role, position and so on and the role of behaviors related to and partially explained by these structural concepts"* [23, p. 40] The family is dynamic. Rodgers indicates that: *"the system of the family "opens and closes" to deal with other systems, to be influenced by them, and to allow certain*

actors to act in other structures both as family representatives and without any reference to their family status".[23, p. 40]

The individual psychological facet deals with the impact of the individual on the family group. The individual will respond to the group, will bring his personality into the group and thus, will test behavioral roles learned elsewhere on the family institution. Group response to individual personality change may include the continuance of previous expectations, modification of expectations to provide conformity, removal of expectations or adoption of the individual's new found expectations.

Farm management decision making could relate to the societal-institutional facet in that goal setting for managing the farm could be set by functions assumed by the farmer's family. What functions are performed by farm families as institutions within our society? Do they influence decision making? What social norms for families constrain the adoption of farm management principles? Does the group interactional facet provide sufficient means of communication and flexibility in role behavior to meet the changing conditions placed on the farm unit by outwardly introduced technological change and economic circumstance? Does the family's role expectations allow the individual members room for growth and development in such a fashion that "new entrepreneurial talent" is made available within the farm unit? All these questions indicate the potential for integration of some sociological family theory with farm management concepts.

In addition to research into areas where new information is required to establish useful principles of family upbringing that could lead to the development of "entrepreneurial talent" in agriculture,

there are already applied tools that can be introduced at the farm management extension level. Dreikurs et al indicate the usefulness of the "Family Council" as a means to resolve family conflict and achieve consensus of family goals. The elements of a family council include mutual respect for all participants, equality in being able to present ideas and participate in decisions, the making of decision by agreement, and the acceptance of responsibility in proportion to ability. Dreikurs et al indicate that the rewards of developing a Council procedure within the family include improved understanding of parenting; improved listening capability; improved co-operation in finding solutions to problems; improved planning that works because of family agreement; and shared responsibility. In the words of Dreikurs et al *"You acquire confidence in your ability to cooperate and are thus enabled to cope with the stresses of daily living that arise outside the family."*[7, p. 1-108] The family council is a means to handle conflict in the modern nuclear family. In this context, it could be a very necessary adjunct to family goal setting and thereby to farm management decision making. It would also be a useful tool for labor allocation and estate planning.

While of lesser significance in modern rural society, the community may establish values and norms which farm decision makers feel they have to adhere to. Today, farmers are very mobile. Their communities may be the local church, the 4H Club, the television set, the nearest Canadian Football League home team, the regional curling association, or their favorite beef Breed Society for North America. Values and norms of all these social groupings will influence the manner in which a farmer views his present investment in land, buildings, and machinery. In some cases, investment in machinery is consumptive. Added tractor capacity may be

as much a function of community values as it is economic wisdom. Community norms may dictate the need for weed free land. Such values are often more effective than County legislation.

In summary, the relevance of sociological theory to farm management theory has been stated by pointing out;

1. that sociology, the study of society and social phenomena, looks for constant social (group) relationships. These become institutions in society wherever they are useful and subject to minimal change;

2. that the kinship institution of the family is directly related to farm management decision making;

3. that there are sociological theories of the family that could be integrated within the body of knowledge known as farm management;

4. that information from research conducted into the relationship between farm management decision making and sociology of the family would result in the development of practical techniques, such as the Family Council, as proposed by Dreikurs et al;

5. that community norms and values can affect farm decision making.

CONCLUSIONS

John Stuart Mills quotation has validity. It is true that, *"a person is not likely to be a good economist who is nothing else"*. This paper has noted that there is much to be gained by looking into both the professions of psychology and sociology for new insights into the theories of decision making on the farm. To do this, the basic assumptions upon which economic theory is deduced must be reviewed to see if modification would yield new results. Creation of hypotheses and test-

ing of these through the conducting of empirical experimentation based on strong inference should provide fruitful areas for research. Two questions will provide guidance. *But sir, what experiment will disprove your hypothesis? But sir, what hypothesis will your experiment disprove?* If neither question can be answered, the research will be of no avail. Inductive reasoning should increasingly improve the knowledge base for the development of new farm management principles. As a consequence, old ones such as the maximization of profit will be upgraded.

It is important to note that farm management which once began as a rather rough and ready field of applied science has been narrowed down to decision making which affects the profitability of the farm. The making of the science more exact has limited its field to economic theory. Economists, at least, agricultural economists, have often further limited their applications of theory to micro-economic theory of the firm and to the theory of decision making under uncertainty. Glen L. Johnson has long ago pointed out that;

> *"It seems extremely important for researchers on the managerial process to realize that the particular philosophic position which they hold is often only one of a number of competing positions held as a matter of accident in their personal educational histories rather than as a result of careful consideration of alternative philosophic positions."*[14, p. 1]

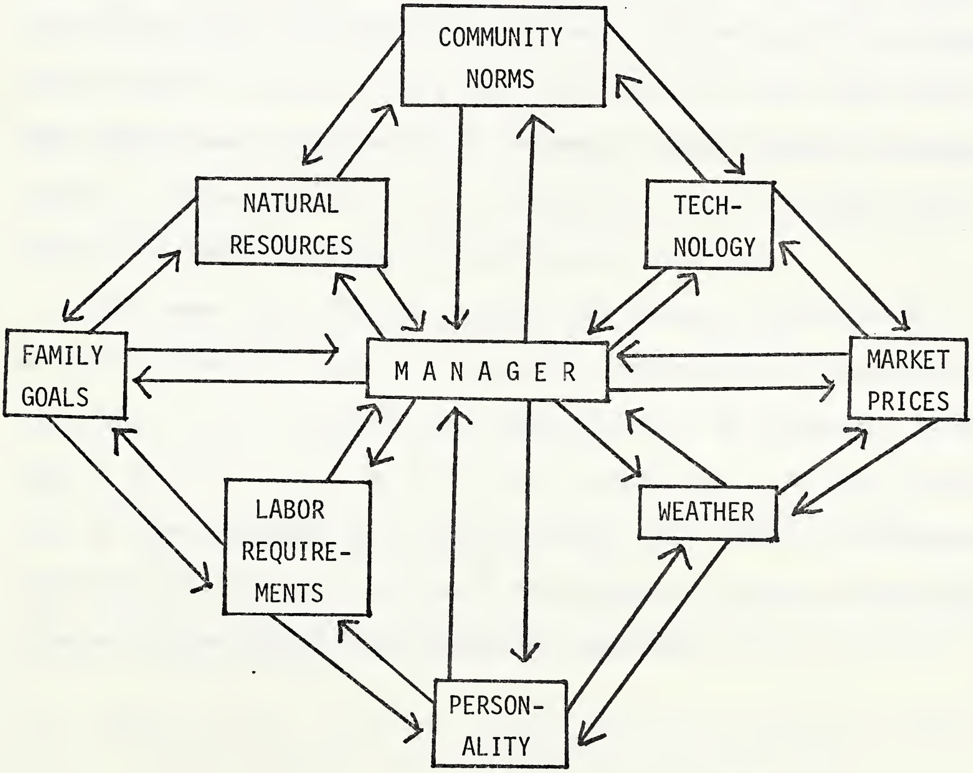
The psychologist has developed concepts in managerial science applied to large organizations which have relatively unexplored parallels in the farm firm where the labor input is confined to that of the manager and the occasional participation by his family during peak load times, such as seeding and harvest. The psychologist has theory around which knowledge about farmer's management practices can be organized.

It should be possible to develop practical statements about individual traits that are characteristic of successful entrepreneurship. Needs establish personal goals. Goals can, in turn, be developed into objectives and activities. Goal directed activity will result in successful organization of a manager's time and labor. Psychological theory should reveal why some managers are heavy risk takers while others are unable to act on well thought out alternatives. Motivation has been noted as a key to change. An understanding of the learning process of farmers would be useful to extension workers. Why are some farmers innovators and others late adopters?

The sociologist has noted that economics has ignored the broader study of institutions in society. As a consequence, economists have had less than a full understanding of the outcome of economic activity. The kinship institution, the family, has been studied sufficiently to the point where a reasonably well developed theory of the family is in place. The family has been described in the context of a social institution fulfilling societal functions; as a dynamic group process; and as a nuturing place for the development of the individual personality. The family is a sociological unit that is most comparable to the economic unit in the model of perfect competition, i.e. the firm. The process of group communication, positional career setting, and changing group roles will all have effects on the goal setting and decision making process within conventional farm management theory and knowledge. Practical tools such as the family council are already available for the assistance of the farm manager. As well, the community will establish norms and values that will affect farm decision making.

It is argued therefore, that a broader decision making model for farm management could include psychological and sociological variables. No longer would profit-maximization be the criterion for efficient management of a farm. Rather profit-maximization would be only one criterion within defined goals and objectives of the farmer and his family. Tools for the use of the farm manager would improve the understanding of self, the understanding of group process, as well as the understanding of farm profitability. In a most simplistic fashion, we could imagine separate bodies of knowledge being fed to the farm manager.

COMPONENTS OF MANAGERIAL DECISION MAKING



Factors affecting the manager's decision making ability are numerous. The importance of expanding farm management to all the components involved in decision making cannot be ignored. A more meaningful science would be the result. Such a broad treatment would yield large dividends for agricultural extension. Similar dividends could be realized in agricultural policy. It is in community norms that much agricultural policy is born. The government that ignores the concept of the family farm does so at its peril. Yet, hard headed economists and business men cannot understand the need to pay attention to such "myths?". The lack of attention is born of the ignorance of sister sciences as much as it is of economic necessity. Frustrations that arise in rural communities as a result of a group's inability to reach goals is best understood within the psychological theory. Conventional farm management theory based on economic theory does not offer sufficient understanding when farm income is falling due to exogenous factors beyond the manager's control. Government policy can be understood through a broader set of theories including economics, psychology and sociology.

This paper has raised the issue of the present limitations of using only economic theory as a basis for farm management knowledge and education. It has raised as many questions as it has answered. It has done so in the hope that by initiating a rethinking of the basic development of farm management as a field of study, that future farm management curriculum and extension tools will be broadened to become increasingly relevant to the needs of the farmers of tomorrow.

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THESIS (MAg) c.2
Parlby, Geryy 1977
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Towards a Broader Scope for
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